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A FEW WORDS ON "UNFORTUNATE RESULTS OF VACCINATION."

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An article in this journal for December 21st records one perfectly normal, one fatal, and two very irregular results of vaccination with one lot of humanized vaccine points, presumably from the same vaccinifer; also, entirely negative results from previous inoculation of the same patients with one package of what was said to be "fresh cow matter," and quite irregular though unimportant phenomena following the use of a second package of "cow matter." All these different lots were obtained from the same "reputable vaccine purveyors." There could not be a better text than Dr. Adams's report for a very extended series of remarks on a subject of prodigious importance to the medical profession and humanity, in regard to which the most singular indifference seems to exist, namely, the comparative value and *safety* of the two varieties of vaccine virus: the animal, or "bovine" (original *spontaneous* cow-pox, transmitted by inoculation through a continuous series of young bovine animals), and the "humanized" virus (cow-pox which has passed through one or more human subjects). If Dr. Adams had given the names of the "reputable purveyors," he would have done a real service in warning his *confrères* of at least one very unreliable source of vaccine supply. As it is, his report throws a suspicion on all who have devoted themselves to this, in the absence of all state or national vaccine institutions, infinitely important specialty. Hardly a day passes that I do not receive reports of utter, often-repeated failure and of bad results of virus procured from a firm of "reputable vaccine purveyors," not physicians, but traders, totally ignorant of everything connected with vaccination, who, simply for the sake of a few additional dollars of income, assume a responsibility which should never be taken except by a physician thoroughly familiar with human vaccination, with the really difficult details of vaccination of animals, and personally cognizant of the source and quality of every particle of virus which he issues. I cannot doubt that if phy-

sicians would note and report instances of *repeated total failure* and ill results of vaccine virus, with a distinct indication of the source or sources of such unreliable supply, they would do a valuable service to the profession. Dr. Adams's results with so-called "cow matter" are precisely identical with those observed by hundreds, possibly thousands, of physicians who have obtained supplies procured by men utterly ignorant of the extremely short period in the brief course of the cow-pox in the animal during which the virus is in its highest condition of perfection. Efficient fluid virus may be obtained from the human vesicle as early as the sixth, or even the fifth day, in minute quantity; and from that time till the tenth or eleventh day, or even later; so long, in fact, as a particle of *clear*, undesiccated lymph exudes from the punctured circle surrounding the umbilicated centre.[1] In the heifer, on the contrary, the whole course of the disease, from the insertion of the virus till complete desiccation and the formation of the scab, is generally less than ten days, although the crusts are too adherent to be easily removed before the thirteenth or fourteenth day. Virus is secreted in the cells of the so-called vesicle rapidly and for a very brief period, during which it is in perfection. Before that time, a clear fluid may be obtained by pressure, but it is simply serum, and inert; after that time, too, pressure will exude a fluid, but in a vast proportion of cases that fluid partakes but feebly of the qualities of good vaccine virus. I do not propose, at this time, to discuss the reasons for this fact, but that it is a fact every close observer of vaccina[2] in the animal will admit. The knowledge of the exact period at which to obtain perfect virus is the one great and essential item of knowledge necessary to success in the specialty of animal vaccination. Dr. Adams's first package was either old and on that account inert, or it was collected from animals whose vesicles were not of cow-pox at all, or were at a period when they contained no efficient virus. His second lot was probably procured when the operator's forceps squeezed out serum, fibrine, blood globules, and perhaps pus, but no vaccine virus, or very little, and that little in a deteriorated state. I say "perhaps pus" because the slight effects, efflorescence, hyperæmia, etc., noticed in two of Dr. Adams's cases, are

[1] Let me not be misunderstood as countenancing, much less recommending, the taking of virus for use from the arm at any time from the fifth or sixth to the twelfth day. Such practice has been the fertile source of imperfect and spurious vaccina. Virus should be taken when the vesicle has reached perfection of form and development, but before the slightest appearance of the areola. The time from insertion of virus cannot be given, for there is a wide difference between cow-pox and humanized virus in the time at which the areola appears and, in a less degree, not only between different "stocks" of humanized virus, but between different individuals vaccinated from the same stock. Before the appearance of areola there is no pus in or around the vesicle; afterward there is no security from its admixture with the lymph.

[2] Vaccina is the original and correct nomenclature. I do not wish to be pedantic, but see no good reason why it should have been changed, or, if changed, why we should not have variolia, scarlatinia, etc., etc.

precisely such as are often seen after inoculation of pus in the earlier stages of decomposition. The results of the use of pus and other animal matters in a more advanced stage of putrescence (for example, the fearful series of cases at Westford in 1860, and a number of cases during the small-pox epidemic of 1872–73 in Boston, both from the use of decomposed and putrid solutions of native humanized and imported so-called animal vaccine scabs) are among the most dreadful accompaniments and sequelæ of vaccine malpractice.

It was more than two years before I fully ascertained the state of the vesicle in the heifer, in which virus exists in its most desirable condition. A want of that knowledge was the cause of frequent failure with the virus as first procured and issued by myself; the same lack of knowledge is one of the principal reasons for the failure of virus now issued by many propagators, and has been at the bottom of most if not all the rational objections to animal vaccination. It is not possible to state the number of hours after vaccination at which virus should be taken from the animal; the time varies from different causes, but a thorough familiarity with the phenomena of vaccina in the animal alone enables the operator to select the time at which the vesicle should be opened. The veriest tyro may hit it in his first attempt, by accident, and may wonder why he fails subsequently, again and again. Any one issuing animal virus may in this way now and then send out virus of the most perfect efficiency amid a host of failures, but unless he possess the critically accurate knowledge referred to he can never be relied on in all cases and at all times and seasons for suitable material for vaccination. Failures with properly collected animal virus of a proper degree of freshness is a very rare circumstance indeed, always supposing that it is used properly and with due care; while, judging from many reports which have reached me, success with that almost constantly issued by some producers is, no matter how skillfully employed, even rarer. I have repeatedly been informed of cases in which three, four, five, and six successive lots of "animal vaccine" have been used with total failure in every instance. The annoyance and blame to physicians, the trouble and even danger (from lack of protection) to patients, and, above all, the infinite injury to the cause of animal or true cow-pox vaccination are incalculable. Such continued and *repeated* failure in the quality of virus is inexcusable, and is the result, invariably, either of neglect, ignorance, or fraud on the part of the propagator or dealer.

I am very familiar with the phenomena described by Dr. Adams as following his use of humanized virus. I have never seen a fatal case in civil practice, but his other results I have witnessed a great many times. I saw one fatal case of revaccination followed by enormous axillary and thoracic abscess, and knew of several others during the

two years of my military service. Besides these, a great many cases of severe disease and lasting injury came under my observation, all traceable to gross malpractice in selecting the vaccinifer, or from using the crusts of retrovaccination which were furnished by contract, in vast quantities, to the army during the war, and did not produce in any instance of thousands within my knowledge anything like vaccina, but in hundreds of cases phenomena of septic inoculation. This rubbish was particularly recommended to the acceptance of the surgeon-general as being true animal virus; its bad reputation has been one of the numerous stumbling blocks in the way of true animal or cow-pox vaccination meeting with that full acceptance and enthusiastic approval which are its due.

In civil practice I have as yet seen no death which could fairly be attributed to vaccination (however abominably done) except the three cases in Westford, in 1860, but many cases in which severe disease has followed humanized vaccination. I have over and over again seen bad results when one arm was inoculated with long-humanized virus and the other with cow-pox, and invariably on the side in which the former was inserted. The humanized side would go through its regular course, perfectly, to the formation and decline of the areola (seventh or eighth to ninth or tenth day), but the process of desiccation of the vesicle and formation of typical scab would not occur; in its place an excavated ulcer appeared, covered by a soft, thin crust which fell off and was renewed every few days, running an indefinite, and often, unless surgically treated, very tedious course; while on the cow-pox side the vesicle (the areola of which always commenced at the end of the ninth day or more frequently in the first half of the tenth, and fully declined at the close of the twelfth day or even later, precisely as described by Jenner, Willan, Coxe, Waterhouse, and a host of early vaccinators) became desiccated with perfect regularity, forming a firm, dark, umbilicated crust, the exact image, on a reduced scale, of the vesicle at its highest perfection, and fell off, or was capable of easy and painless removal from the twenty-first to the twenty-eighth, thirtieth, or even thirty-second day. At the time when I had both the English national vaccine stock and cow-pox, I supplied a great many physicians with both, and urged them to repeat this experiment and verify my assertions in regard to the constantly observed difference in the form, course, and duration of the two sorts of vaccination, the exact correspondence of animal vaccination with that described by Jenner, and its wide difference from the results of the use of the best stock of long-humanized virus. I should be happy to do this now if I still continued the propagation of the so-called "Jennerian" stock. If readers wish to repeat this experiment, let them remember it must be made with virus of *long* humanization. I never made a trial with lymph of early removes

from the cow; it is possible that some of the same phenomena may be observed in its use, but I have no experience on that point.

In all that I may write, particularly as to the deterioration in vigor of humanized virus, I am to be understood as *always* referring to that which has passed through a large number of human systems. The deterioration after the second remove from the cow is very gradual indeed, easily noticed if vaccination with the twentieth remove be contrasted with that of the third, but *not* by comparing the twentieth with the nineteenth remove. It is quite possible, and indeed probable, that vaccination with *early* human removes is perfectly protective, as much so to all intents and purposes as that with cow-pox, and I do not think that the liability to erysipelas has yet been noted with the first three or four removes from the cow. Now I always use the animal virus, not because early removes *may* not be just as good, but because vaccination with virus direct from the animal has alone been proved to be absolutely protective from variolous disease (when done at any time after puberty) in every case, and also entirely exempt not only from erysipelatous complication but from all chance of syphilitic and other possible contamination. A great deal of error has arisen from contrasting effects of — say the third or fourth remove with those of cow-pox. If physicians wish to satisfy themselves as to the deterioration of virus, let them get, if possible, virus of eight or ten years' humanization and contrast its effects with those from the use of that *direct* from the heifer obtained by the method of animal vaccination. It may well be doubted whether such virus can *now* be obtained in America, as probably all now used on this side of the Atlantic is of comparatively early removes from the "stock" first issued here by myself in September, 1870. I think, however, that just the right virus can be obtained by application to the National Vaccine Institution of England. Virus very frequently received by myself from that admirable institution always proved the best possible lymph of *long* humanization. If it could be ascertained at what human remove from the cow permanent protective power first becomes impaired to an important degree, and if such virus could be fully insured from syphilitic contamination and liability to erysipelas, etc., all rational objections to the use of *early* human removes would be ended. Such knowledge and security are not attainable, and therefore the only absolutely safe course is to use either virus of original cow-pox or that transmitted through a series of selected bovine animals.

Erysipelas, the bane of vaccinators, not the vivid and wide areola, that sure mark of a perfect vaccination, which is often called erysipelas by those who mistake the proof of perfection of virus for a sign of its violence and deficiency, but *true* erysipelas, is a disease peculiar to vaccination with humanized lymph, and has never followed vaccination with true animal virus. Erysipelas is a disease of which the occasional

occurrence is inseparable from vaccination with humanized virus. It is apt to complicate the most perfect development of the vesicles and areola resulting from the use of that virus; in fact I have very seldom known it to follow any other than a "fine arm." No care in the selection of virus, no study of seasons or of the condition of patients, affords any means of escape whatever. During the sixteen years in which I supplied humanized virus, the presence of this pest in my own practice and in that of my correspondents was the one great and serious drawback, the one formidable source of anxiety and blame. Since I have issued bovine virus to a far greater extent, and to from eight thousand to nine thousand correspondents, for the vaccination of large cities, towns, factories, and bodies of troops, I have never received a single complaint of the occurrence of erysipelas. It is said to attack particularly cases of revaccination, but in 1872–73 I revaccinated about twelve thousand patients with my own hand, and there was not one case of erysipelas among them all, nor have I ever known a case following the use of bovine virus at any other time.

It is certain that with virus from my stables over one million of vaccinations have been made, involving the production of many millions of slight, cutaneous wounds. From other producers virus has also been issued to vaccinate a great many people. Not one case of erysipelas can, to my knowledge, be connected with this host of vaccinations and revaccinations *direct* from the animal. Fatal cases of erysipelas reported as following the use of this virus were the result of vaccination with virus of the tenth, twentieth, or thirtieth human remove, and not with that direct from the animal.

The reason why, in February, 1873, I abruptly ceased to propagate and collect humanized virus was because in one week of that month I had five cases of erysipelas. They were all in children vaccinated on one arm with the institution "stock" and on the other with cow-pox; and in every instance the disease appeared on the humanized side. I had previously had four precisely similar cases scattered over the preceding two and a half years, and contemplated an eventual abandonment of the old stock;[1] but this epidemic determined me at once to discontinue vaccination with humanized virus.

I shall be happy to have an opportunity to discuss at length this fact, now first publicly announced, but shall regard no answers to my an-

[1] I feel now that I continued the use of humanized virus too long; my only reason for not discontinuing its use much sooner was a desire to supply my *confrères* with means of demonstrating the great difference between *true* animal virus and that formerly in use, and this could be done only by the experiment above alluded to. If I had not become absolutely convinced that I had no moral right to do so, that continued humanized vaccination meant continued "bother" and suffering to mothers and infants, and continued danger from erysipelas, I suppose I should still have propagated the old "stock" for the same purpose, salving my conscience by vaccinating *one* arm with cow-pox.

nouncement of it, unless they are supported by *undoubted* cases of *true* erysipelas following vaccination or revaccination with *undoubtedly* authentic *true* animal virus, that is, virus which (without ever having passed through a single human system) has been transmitted through a series of bovine animals from an original *spontaneous* case of cow-pox, like that of Beaugency.

In Dr. Adams's cases there is no real proof that the points in the package were all from one arm, taken at the same time; but still, diverse as were the results, that is quite possible.

In September, 1870, I introduced into America the method of *true* animal vaccination; for some three months I alone supplied cow-pox or animal virus. For nearly three years I had but one considerable competitor. During this time anything which I might have written in favor of animal vaccination would have been open to uncharitable criticisms; but now, when my rivals literally swarm in every part of the country, I feel that the situation is changed, and that I have no right to withhold longer from the profession whatever may be valuable and suggestive in my experience in the specialty of vaccination, and everything connected with it.

KERATO-CONUS; OPERATION BY BOWMAN'S METHOD; RESULTS.

BY WILLIAM SHAW BOWEN, M. D. HARV.

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Mr. J. F. B., aged thirty, marine carpenter, came for consultation October 19, 1875, on account of "increasing near-sightedness." Has worn concave glasses for eight years, and during that time has changed them frequently. Observed "a difference in the sight of the eyes" five years ago. Now wears $-\frac{1}{8}$ spherical for both eyes. Has had no pain or photophobia. With pupil dilated with atropine, right eye, $V=\frac{15}{200}$; left eye, $V=\frac{15}{100}$. With a concave cylindrical glass, right eye, $V=\frac{15}{100}$; left eye, $V=\frac{15}{70}$.

The ophthalmoscopic erect image showed the characteristic central red reflex, surrounded by a dark zone, which again faded off into a reddish one at the periphery of the cornea. There was a parallax when the convex lens was moved in front of the eye. The apex of the cone was central in the right and slightly downwards and inwards in the left eye, just within the apex of the oblique triangle formed by the intersection of the vertical and horizontal corneal meridians. The left cornea was normally transparent, but the apex of the right was irregularly opaque from exposure and lack of proper lubrication by the tears. The evils of the increasing opacity were pointed out to the patient, who consented to an operation for relief. A large-sized Bowman trephine,

made by Weiss, of London, was selected, and, the patient being under ether, a disc of corneal tissue consisting of the external epithelial and of the thinned middle fibrous layers was removed without penetrating the anterior chamber. The cornea was unusually rigid and the distention was quite uniform, there being no appreciable difference in the thickness of the removed disc at its margin. Descemet's membrane bulged forwards and filled the opening, and, the pupil having been previously contracted with Calabar extract, a small opening was made in the distended membrane directly over the centre of the pupil, allowing the aqueous to dribble away without the risk of anterior synechia. A cold compress was applied, confined by a Liebreich pressure bandage. In two days this was removed and atropine was instilled. The corneal zone was rosy, and the iris turgid. Atropine was instilled every day, and the compress continued for a week. The iritis was moderate in severity, accompanied by but little pain, and the condition of the patient was generally comfortable. Fourteen days after the operation the aqueous ceased to exude, and on the twenty-first day the corneal cicatrix seemed complete. There was a slight elevation at one point of the union, which was touched with caustic and disappeared. The cicatrix was hard, white, and moderate in extent, surrounded by a haze of infiltration, which, however, did not extend to the periphery of the cornea.

March 29, 1876. The cicatrix was central and circumscribed, the surrounding infiltration absorbed, and the cornea perfectly free from irritation. The staphyloma was apparently reduced, and the corneal curve normal; iris free in its motions. A small iridectomy downwards and inwards was made.

April 15th. Fitted for the eye $-\frac{1}{24}$ sph., ○ $-\frac{1}{36}$ cy. Axis, horizontal. V $= \frac{1}{10}$. A cylindrical glass was provided for the left eye.

December 2, 1876. No apparent alteration in appearance of the cornea save a modification in the size of the leucoma from the cicatrix. This was now tattooed with India ink in glycerine, accomplished in two sittings. Previous to the tattooing V $= \frac{1}{10}$.

Mr. Bowman says: "My experience thus far induces me to recommend this operation in even the earlier stages and slight degrees of conical cornea, as a smaller extent of cornea need then be involved, and there must then be a better prospect of recovering a quite normal curvature than if the operation be delayed until the bulge grows greater. A considerable advantage of this method would seem to be that, by its harmlessness, it will admit of being applied to a number of slight and incipient cases which the surgeon has hitherto been very timid in meddling with, notwithstanding they are attended with great defects of vision which no optical contrivance will correct."

While it must be admitted that all operative procedures for the relief of visual loss in staphyloma pellucida are as yet in their infancy, it cer-

tainly seems that, from observation of a number of cases operated on by Mr. Bowman and others, the trephining process is thus far the most satisfactory of all that have been devised, and will afford the best results, although the operation is not so free from danger of sloughing of the cornea as Mr. Bowman's especial interest in it leads him to imagine.

RECENT PROGRESS IN THE TREATMENT OF CHILDREN'S DISEASES.

BY D. H. HAYDEN, M. D.

Retropharyngeal Abscesses in Children, and Lymphadenitis Retropharyngealis.[1] — The author, in the article from which the following abstract is taken, gives the result of his observations in one hundred and forty-four cases of the former disease and forty-three of the latter.

The one hundred and forty-four cases are classified as follows: one hundred and twenty-nine idiopathic retropharyngeal abscesses; three secondary retropharyngeal abscesses, resulting from the sinking of pus from abscesses of the neck; four secondary retropharyngeal abscesses, occurring in the course of spondylitis cervicalis; seven retropharyngeal abscesses in the course of scarlatina; one traumatic retropharyngeal abscess, caused by a foreign body.

Of these abscesses, one hundred and two were opened with a bistoury in the pharynx; five, by pressure with the finger in the pharynx; in nineteen an opening formed spontaneously in the pharynx; eighteen remained unopened.

Of the one hundred and forty-four cases, eleven died, one hundred and twenty recovered; thirteen cases were lost sight of, being outpatients.

The author in common with Roustan, Gautier, and Schmitz[2] regards the origin of these abscesses as always an inflammation of a retropharyngeal gland. The accumulated clinical observations, the anatomical relations of the retropharyngeal glands and their pathological action, all support this view which the author now adopts, though in an earlier article upon the subject[3] he considered this disease to have its beginning in an inflammation of the mucous membrane.

The greater number of these abscesses occurred on the right or left side; and on the corresponding side there was always a swelling at the angle of the inferior maxillary bone. In a very few cases the abscess was on the median line of the posterior wall of the pharynx. Of those

[1] By Dr. Joh. Bokai, O. O. Professor of Diseases of Children and Physician to the Pesth Children's Hospital. (Jahrbuch für Kinderheilkunde. N. F. Band x., Heft 1 and 2, August 15, 1876.)

[2] Vide JOURNAL, February 5, 1874.

[3] Jahrbuch für Kinderheilkunde, Band i., Heft iv.

situated on the side, the right side was affected proportionally to the left as eighty-six to sixty-four.

The author classifies as secondary abscesses only such as are formed by the sinking of pus from abscesses of the superficial glands of the neck, or where caries of the vertebræ cervicales exists; and of the one hundred and forty-four cases there were only seven such, which shows them to be rarer than generally is supposed. There was no important difference between the number of boys and girls affected. The disease was most frequent in the first year of infant life; and was comparatively infrequent after the third year. With regard to the time of year when most prevalent, it can be said that the seasons of the year most favorable to inflammations of the pharynx are also conducive to the production of this disease. Of greater importance, as a cause, are those constitutional diseases which predispose to inflammations of the lymphatic glands in general; and in the first rank is scrofula. The influence of local affections of the mouth and pharynx upon the neighboring lymphatic glands must be taken into consideration. There is no evidence that dentition plays any part in the ætiology of this disease, and its frequent occurrence between the second and sixth month and the comparatively small number of these abscesses after the ninth month speak against any causal connection between the two processes.

With reference to the method of examination: whereas inspection will often fail to discover the presence of a retropharyngeal abscess, an examination with the forefinger is a sure means of diagnosis. With children under one year of age an exploration in this way is very easy; with older children it is sometimes a matter of great difficulty. In the latter cases the author is in the habit of passing the forefinger behind the molar teeth, boring it in. When the obstruction is overcome he presses the tongue down to prevent being bitten. In case of the presence of diphtheria of the pharynx, as a matter of precaution, a dilator or the handle of a spoon is employed.

The duration of time from the appearance of the first symptoms to the formation of an abscess that can be detected varies. Whereas this may take place as early as the second day, it is sometimes as long as fourteen days. With older children the symptoms are usually less violent than with young infants, and the course of the disease in infants under one year of age is generally a very rapid one.

In the symptomatology of the disease, given in a very exhaustive description, the author offers nothing new requiring notice.

The examination made in the manner recommended makes a differential diagnosis, as a rule, easy. There could be a doubt in the very beginning whether we had to do with a simple pharyngitis, but the finger would remove such doubt. Diphtheritic paralysis resembles this disease in difficult deglutition and the snuffling sound in respiration;

but the absence of the other characteristic symptoms would prevent any mistake. Hypertrophy of the tonsils can be diagnosticated by inspection, and when the finger discovers no complicating abscess on the side or median line of the pharynx the snoring during sleep is to be attributed to this. Polypi, extending backwards from the nasal cavity, and filling up, as they sometimes have been known to do, the cavity of the pharynx, can be distinguished by the absence of pain and their hard consistence and by the absence of any external tumor. Follicular or diphtheritic inflammation of the pharynx can be detected by inspection. Retropharyngeal abscess can never be mistaken for croup, if the characteristic symptoms of croup are kept in view and a digital exploration made.

With regard to the prognosis: of the one hundred and twenty-nine cases of idiopathic retropharyngeal abscesses and the seven which occurred during the course of scarlatina, seven died. Of the four cases of secondary abscess occurring in cases of spondylitis cervicalis, three ended fatally. The one case of traumatic abscess died. In these eleven fatal cases, an opening with the bistoury was made in seven; in two a spontaneous opening took place; and in two the abscess was not opened. To form an accurate prognosis the kind of retropharyngeal abscess must be taken into consideration. It can be stated, too, as a general rule, that the result will be almost surely fatal if the abscess is left to itself and is not opened. The acute form is more dangerous than the subacute or chronic. Secondary abscesses, the result of the sinking of pus from abscesses in the subacutaneous tissue of the neck, are less dangerous than those resulting from disease of the cervical vertebræ. The age of the child must be taken into consideration, the younger the child the more dangerous being the disease. The author finds no reasons for changing his views as to the treatment of this disease from those expressed in his earlier article, the all-important point being the incision of the abscess as soon as detected, as the most dangerous symptoms are thus almost certainly at once removed.

When swelling without fluctuation exists, the author is inclined to paint the soft palate and posterior wall of the pharynx with tincture of iodine or solution of the iodide of potassium, as recommended by Schmitz,[1] hoping thus to hasten suppuration or perhaps prevent the formation of pus, although he has never in his own experience witnessed any such good results from its use.

In operating, the author always uses a narrow-pointed bistoury protected to within a short distance of the end with sticking-plaster, and prefers this to instruments invented expressly for this operation by Stoerk[2] and Schmitz. The introduction of the bistoury is effected in

[1] Vide JOURNAL, February 5, 1874, page 143.

[2] Handbuch der allgemeinen und speciellen Chirurgie, Von Pitha und Professor Billroth.

two ways: either by inspection by means of a spatula, or, where this is not practicable, by guiding it with the forefinger of the left hand introduced into the pharynx.

The recommendation of Schmitz to press down the epiglottis with the left forefinger at the moment of opening the abscess, in order to prevent pus from escaping into the larynx, Professor Bokai does not believe accomplishes the object for which it is intended, inasmuch as the pus does not all escape at the instant of the operation, but continues to flow for a long time.

The two accidents to guard against, connected with the operation, are a dangerous hæmorrhage and asphyxia from the escape of the pus into the air passages. A mere bleeding from the incision is easily checked by injections of cold water. The anatomical relations of the large vessels must of course be kept in view. From the second cause the author has fortunately never had a fatal result.

The prominent facts connected with the statistics of these cases are given in a tabular form, convenient for consultation, and at the end are reported in full ten of the most interesting cases.

On Infantile Paralysis.[1] — The author's views are embraced in the following conclusions to which his learned treatise has led him: —

(1.) Infantile paralysis has its seat, without doubt, in the spine. At the beginning the process is one of irritation, which is followed by one of an opposite nature, and as a result we have atrophy with breaking down and disappearance of the large motor cells in the anterior cornua.

(2.) While the first stage, that of irritation, is one of short duration and accompanied by but few symptoms, the following one of degeneration and atrophy lasts for months and years, and remains sometimes permanent and stationary during the patient's whole life. The symptoms peculiar to this stage are many and various, the most prominent and constant ones being those dependent upon atrophy and degeneration of the muscles.

(3.) Of these latter the most constant are contractions which have for their cause several pathological conditions, the most frequent one being the contractility of the antagonistic muscles which have remained unaffected or have regained their power of contracting.

(4.) Infantile paralysis presents a conglomeration of symptoms which makes it a disease *sui generis*, and distinct from all other forms of paralysis.

(5.) The so-called paralysis temporanea of Kennedy is not another disease than the one in question, but a form of this disease which runs a favorable and rapid course, not necessarily being followed by atrophy and fatty degeneration of the muscles.

[1] Vizioli. Il Raccoglitore medico, No. 9, 1876. Allg. medicinische Central-Zeitung, July 5, 1876.

(6.) The prognosis depends upon the severity of the disease, there being cases which terminate in spontaneous recovery, and others which remain stationary and never improve. Between these two forms lie many that can be cured by treatment.

(7.) The treatment in the first stage must be directed against the process of irritation. We must consequently have resort to antiphlogistics and such remedies as possess the power of contracting the calibre of the blood vessels, in order to diminish the flow of blood, and thus check the tending to degenerative processes. The best means for this purpose is the constant stream, applying the anode to the vertebræ and the cathode to the affected limbs. The treatment of the second degenerative period is a long and difficult one. By means of the electric stream it can be determined whether we must employ active and stimulating treatment or the contrary. If the induction stream causes no nervo-muscular reaction, this shows that the motor power of the spine is lost, and that atrophy and fatty degeneration of the muscles are beginning. At this stage we must have recourse to preparations of strychnia, the use of baths, cold-water douches, electricity, active and passive gymnastics, the most strengthening food, etc.

(8.) Hope of recovery must not be abandoned, and the physician must frequently change his remedies, and persevere in his treatment months and sometimes years. In this way he will rarely fail to meet with a favorable result even if the success be only a partial one.

Peritonitis in Children.[1] — In this disease, which is often extremely difficult of diagnosis, the author calls attention to two symptoms which are quite characteristic of the disease. In the first place there is the impossibility of lying with the legs stretched out, the patient having both thighs flexed upon the abdomen, and, consequently, he cannot be made to stand on his feet. The second important aid to diagnosis is the respiration. Even before a peritoneal exudation is demonstrable, sharp pains, which arise in both hypochondria, make inspiration very difficult, and should there coexist a bronchial catarrh, coughing is impossible. Expiration goes on, unimpeded. Such children can cry quite loud; but the pauses between the cries are long, being filled out by a series of very short inspiratory acts. This difference between inspiration and expiration during crying is the most important diagnostic symptom in the peritonitis of children, and is never absent.

The prognosis is less unfavorable than with adults. Although a subsequent cheesy infiltration of the lungs is to be feared, yet this process with young children has not the same serious significance as with older persons. In such cases, when the child receives proper care and treatment, cicatrization or calcification of the infiltration often takes place.

[1] Memorabilien, 6 Heft, S. Kersch, Prague, 1876; and Allg. medicinische Central-Zeitung, September 9, 1876.

In forming the prognosis the author's many years' experience has demonstrated that the sex of the patient must be taken into consideration, as with little girls sterility remains behind notwithstanding they may otherwise be restored to perfect health. The author has observed ten such cases between five and fourteen years of age.

The author's treatment consists in quinine, as many grains as the child is years old, once or twice daily, and the application of leeches followed by cold-water dressings which must be rapidly changed, applying over these dressings a piece of gutta-percha paper to protect the bedclothes. Morphine is also employed, symptomatically.

There sometimes takes place so large an exudation in the abdominal cavity as to require the use of the trocar; and one must not wait too long before employing this instrument, as by the long continuation of such a collection of fluid œdema of the lower extremities is apt to ensue, and by pressure on the large abdominal vessels a new exudation is excited. In these cases, too, the strongest diaphoretics or diuretics are powerless until the larger portion of the fluid has been evacuated. The author recommends that the wound be left open for a time, otherwise a second puncture is often necessary. Several punctures are sometimes required, and recovery, notwithstanding, takes place.

Bouchut on Multiple Abscesses of the Cellular Tissue in Infants.— M. Bouchut[1] attributes as the cause of this rare affection three diatheses: the scrofulous, the syphilitic, and the puerperal. In the puerperal form nodules develop under the skin, which then reddens and becomes thinner and painful. The nodules, at first hard, rapidly soften and fluctuate, and finally, unless previously incised, burst. Suppuration takes place much more quickly in this than in the other two forms. In the syphilitic variety usually the child has already been cured of the commoner manifestations of syphilis, and small, hard, slightly movable nodules (gummata) then appear in the subcutaneous tissue. They pass through the same stages as those of the preceding form, but do not burst for perhaps two or three months. After the discharge of the pus, which is small in quantity and of a yellow, sanious character, the opening remains livid and fistulous for some time prior to closing. If the abscess be situated over a bone, the periosteum is destroyed and the bone exfoliates. The scrofulous form generally occurs between the eighth and the fifteenth year. It is very rarely seen in the first year of life. It begins with very small subcutaneous nodules scattered over the trunk and limbs, and less commonly over the face. After having remained stationary for some time they increase in volume, soften, fluctuate, and break, with a discharge of thick, greenish pus. A fistula results, and this with its reddish, livid orifice remains open for several months and leaves a depressed scar which for a long time is colored.

[1] Gazette des Hôpitaux, August 1, 1876; London Medical Record, November 15, 1876.

The treatment of the puerperal form consists in the removal of the child from the mother, the application of linseed poultices, and, as soon as fluctuation is felt, the incision of the lumps. The syphilitic and scrofulous forms should be treated respectively with iodide of potassium, cod-liver oil, etc., and while the nodules are hard, iodide of lead ointment should be applied. Four cases are reported.

(*To be concluded.*)

PROCEEDINGS OF THE BOSTON SOCIETY FOR MEDICAL OBSERVATION.

O. W. DOE, M. D., SECRETARY.

NOVEMBER 20, 1876. *Acute Cystitis.* — DR. FIFIELD read a paper on this subject. (Reserved for publication.)

DR. RICHARDSON asked if in any of the cases reported the attack came on suddenly or was ushered in with a chill.

DR. FIFIELD answered that in one case there was a distinct chill; in another, following pregnancy, the attack came on very suddenly.

DR. KNIGHT inquired of Dr. Fifield if he had noticed any ill results from the use of copaiba; and also if he thought it unnecessary to keep the urine alkaline.

DR. FIFIELD said he had seen an eruption appear during the use of copaiba, but no other ill effects. As regards the use of alkalies, he thought them unnecessary, as in his own practice he had found the administration of iron as efficacious as potash.

DR. BOLLES asked if there was any distinct evidence of acute cystitis arising from changes in the urine.

DR. FIFIELD said he knew of no such case.

DR. FITZ inquired as to whether, in the cases reported, an irritable bladder existed after the cystitis was relieved, saying that he thought a recurrence of the disease usually took place in such instances.

DR. FIFIELD answered that he had noticed no such condition in any of his cases.

DR. ARNOLD asked if the constitutional symptoms were severe, adding that in the cases seen by him the constitutional disturbance was out of proportion to the local symptoms.

DR. FIFIELD replied that they were not severe.

Jointed Ham Splint. — DR. BOLLES showed a jointed ham splint with a hinge which could be set at any angle, and fastened with great strength, yet so compact that it could be easily worn inside the ordinary clothes. It was applied to the leg by means of straps and buckles passed over "Crimean" splints laid upon the front of the limb to prevent constriction of the vessels.

Post-Mortem Appearance of the Skin after Subcutaneous Injection of Brandy before Death. — DR. BOLLES showed a colored drawing of the post-mortem appearances following the subcutaneous injection of thirty minim doses of

brandy about an hour before death. There was a very light yellow spot, about half an inch across, just above each puncture, much whiter than the rest of the skin. This was surrounded by a red areola, an inch and a half or more in diameter, of irregular shape, rather pale at its outer border, which was, however, distinct, of a much deeper color within, and bounded next the yellow spot by an intense red line.

The appearance suggested the explanation that the alcohol had contracted the vessels and so driven the blood from the middle spot and accumulated it in the areola surrounding it.

Dr. Draper said he had often given subcutaneous injections of brandy, but had never observed so marked changes in the skin as described by Dr. Bolles.

Dr. Forster remarked that he had given whisky subcutaneously, and had noticed a dark discoloration of the skin surrounding the point of puncture.

Paralysis from Over-Exertion. — Dr. Inches mentioned the case of a girl, eleven years old, a resident of Philadelphia, who, after undue exertion in walking about through the Exhibition buildings, suffered a paralysis of the lower limbs as far as the knees, and of the arms up to the elbows. The child first complained of feeling weak and tired, and finally had to be carried from the grounds.

Dr. Pepper, under whose care the child was placed, said he had seen many similar cases arising from over-exertion, and had found that they did well and usually recovered in about a week. He had treated them by derivatives and ergot internally, though he thought they would do well even without any medicine. This patient recovered in ten days.

Retained Placenta after Miscarriage. — Dr. Richardson reported the case of a woman, twenty-eight years old, pregnant for the fourth time, who miscarried for the fourth time in August last. Two weeks after, her catamenia appeared and continued, with now and then a few days of intermission, until ten days ago, when he removed a shriveled placenta which when rolled upon itself was about the size of a small apple.

Dr. Waterman remarked that he had once removed a placenta six weeks after miscarriage.

Dr. Fitz asked if any portion of the placenta protruded.

Dr. Richardson replied that it did not, but on examination with the speculum the os was found to be very patulous, and high up in the cervix a small portion of the placenta could be seen.

Scarlatina or Belladonna? — Dr. Bolles reported the following case: A girl aged seven years was taken sick with well-marked scarlatina November 4th, three days after exposure, and having the disease in a perfectly typical manner made a good recovery. She had a little brother, a nursing baby of four and a half months, rather feeble and subject to a cough, the sequel of pertussis last summer. He was with her on the 4th, after which he was isolated as well as could be in the same house, and, with the rest of the family, was allowed belladonna night and morning, taking four drops of a solution (equivalent to one twelfth of a grain, or less, of the root), a quantity which it was afterwards ascertained the mother estimated, sometimes giving six and even eight drops.

On the 8th, after taking six doses of the belladonna, one of which was an

hour or two before, a bright eruption suddenly appeared upon the face, covering the forehead, cheeks and chin, excepting spaces around the eyes and mouth, which were white. He was at once placed in a cold pack and in about fifteen minutes more the eruption had disappeared. Thoroughly frightened now, the mother applied hot water to the chest as vigorously as she had just done the cold, following it up with a poultice of hot hops and vinegar until the scalding and irritation produced a decided erythema of the throat. About two hours after the first appearance of the eruption on the face the patient was seen by Dr. Bolles. He was then lying in his mother's arms, rather restless and pale, but looked bright and free from pain; respiration noisy, voice clear. The tonsils were swollen and the pillars of the fauces reddened. Tongue slightly coated, papillæ not enlarged. Pupils normal. Temperature 102°. Belladonna omitted.

There was no change during the next day or in the forenoon of that following, and not considering the case one of scarlatina, the belladonna was resumed, one eighth of a grain being given.

An hour and a quarter after giving the medicine the same redness of the face reappeared. It was an erythema of very intense color and distinct margins, covering the face and front of the neck, excepting rings around the eyes and mouth which were pale and white. The scald of the chest was as before, having remained unchanged, a little paler perhaps. The cough, breathing, and the appearance of the throat were the same. The pupils were not dilated, skin not hot. Temperature 100½°. There had been no chill, vomiting, convulsion, nor any other symptom of fever. The patient had, during the autumn more or less diarrhœa but the bowels were now in good order.

The redness of the face disappeared again in half an hour and never came back; that of the chest followed the usual course of a "burn" and faded out in a day or two more, and he did not present any other symptoms of scarlet fever before the fourteenth, at which time the child passed into the hands of a homœopathic practitioner. There was not the slightest appearance of the "strawberry tongue," nor were his general symptoms other than those of a heavy cold which he took about a week before his sister became sick and which seemed to grow rather worse. There were a few râles in both lungs.

Dr. Bolles added that Bartholow said [1] that the erythema of belladonna wants the punctated character of that of scarlatina, and is associated with redness and dryness of the fauces. In the case just reported the erythema was very fairly punctated, and the fauces though reddened were not dry; yet if it was not produced by the medicine, the coincidence was certainly misleading.

December 4, 1876. *Heat-Stroke.* — Dr. Fisher reported a case of delusion of a week's duration, induced by heat-stroke. (Reserved for publication.)

Dr. Webber inquired if headache were complained of.

Dr. Fisher said there was no complaint, properly, of headache, but rather of a feeling of tightness and distress about the head.

Dr. Webber thought that headache was an early symptom in heat-stroke, and that the feeling of tightness and distress came on later.

[1] Bartholow's Materia Medica, page 282.

Dr. Jeffries referred to a slight attack of heat-stroke which he suffered while in Paris, in 1859, after riding some distance in the sun, on top of an omnibus. There seemed to be at times a condition of semi-unconsciousness, a sensation of losing himself, which would be relieved for a while by the use of stimulants. He did not recover the feeling of complete control until the middle of the next day. The stimulants exerted no intoxicating effect. He had no headache or any after-results excepting a feeling of languor, and since then a feeling of discomfort and nausea when walking in the sun on a hot day.

Dr. Fisher mentioned a case of acute mania arising from heat-stroke, so severe as to necessitate the removal of the patient to an asylum where he remained some weeks.

Erythema arising from the Use of Belladonna. — Dr. C. P. Putnam referred to the case reported at the last meeting by Dr. Bolles, and said he had often seen an erythema appear on the faces and chests of babies, lasting about two hours, after doses of $\frac{1}{33}$ of a grain of extract of belladonna given for whooping-cough. He had never seen any severe poisoning from belladonna, but on the contrary, thought that young persons, as a general thing, were less susceptible to the drug than adults, or at any rate not more so. He had frequently given suppositories containing half a grain of extract of belladonna to children from six to ten years old, for enuresis, without observing any poisonous effects; while they had also taken twice daily, without causing any other signs of poisoning than a slight dryness of the mouth, tincture of belladonna up to thirteen drops. He asked if serious poisoning had been observed in young people.

Dr. Williams said he had seen young children sensibly affected by one drop of a solution of atropia (grs. viii to water ℥i) introduced into the eye.

Dr. Fisher mentioned the case of an adult in whom one or two homœopathic pellets of atropia had brought on dryness of the throat and dilatation of the pupils.

Dr. Webber referred to the case of a lady forty years of age, who took one sixth of a grain of the extract of belladonna three times a day, causing, after a few days, an eruption to appear on the cheeks and throat. The latter was constant, the former occurred only when the patient was excited. In contrast to this, a case in New York was referred to where the patient, who was suffering from some spasmodic affection, by gradually though rapidly increasing the dose, came to take half a grain of the sulphate of atropine several times a day.

December 18, 1876. *Sudden Death from Embolism.* — Dr. Fitz read a paper on this subject, which was published in the Journal of January 25th.

Dr. J. T. G. Nichols mentioned two cases of pleurisy, one in a woman at the age of sixty, the other in a man at the age of forty. In the first case, two weeks after the commencement of the disease, phlebitis, affecting one of the saphenous veins, came on, and a week later the patient fell back in bed and died instantly. In the second case there was also phlebitis as a complication, but the patient recovered. Dr. Nichols asked if sudden death from embolism had been known to occur in phlebitis accompanying pneumonia.

Dr. Fitz said he had never met with a case, but thought it might occur as well in pneumonia as in pleurisy.

Dr. Ellis questioned whether in pleurisy sudden death did not frequently result from the large effusion, and said that a change in the position of the heart might explain theoretically how sudden death might arise from the interference with the circulation thereby produced. Dr. Ellis thought that in such cases the effusion would be found on the left side, and asked if such had been noticed by others to be the fact.

Dr. Knight remarked that he had somewhere seen it stated that sudden death in pleurisy always arose when the effusion was on the left side.

Dr. Curtis said that Trousseau laid particular stress on the danger arising from large effusion in the left pleural cavity.

Dr. Nichols thought that this could not have been the cause of death in the case reported by him, as the effusion was not sufficient to cause any displacement of the heart.

Dr. Minot mentioned the following case which he had recently seen in consultation: A woman, one week after confinement, was attacked with sudden dyspnœa and severe pain in the right side of the chest, attended with a feeble, almost inappreciable pulse. She had had no disease of the lower extremities, no phlebitis. The patient recovered, the diagnosis in the case being probably an embolus of the smaller branches of the pulmonary artery.

Dr. Cutler spoke of a case he had seen two years ago. The patient had suffered for several years from necrosis of the tibia, and dying suddenly, after frequent attacks of dyspnœa and præcordial distress, the diagnosis of embolism which he had made was confirmed at the autopsy, as both lungs were found affected thereby.

Dr. Driver reported the two following cases: The first was that of a large, obese, somewhat debilitated patient, suffering from varicose ulcer of the leg. Dying suddenly, a plugging of both pulmonary arteries even to the fourth branches was found. The second case was that of a pregnant woman, who was anæmic, the countenance being of an ashy appearance; she had a rapid pulse and a choking, spasmodic cough, with dyspnœa. There was phlebitis affecting the right leg. A loud, sonorous, blowing murmur was heard over the right chest, distinct even to the base of the lung, but diminishing towards the heart. The phlebitis increased in the right leg, and soon affected the left also. She went through her confinement without any untoward results but the murmur continues up to the present time.

Removal of a Uterine Polypus. — Dr. Minot showed a uterine polypus about the size of a hen's egg, which he had recently removed. The patient, five months after an easy confinement, began to suffer from hæmorrhage and bearing-down pains, and on vaginal examination this mass was found protruding from the os. The special interest in the case was with reference to the differential diagnosis between polypus and an inverted uterus.

Dr. Baker referred to two cases he had seen in New York: one in which the pedicle was held so tightly by the os that it was impossible to pass a fine probe; in the other the passing of the sound settled the diagnosis. In the first case the nature of the tumor was diagnosticated by the hand in the rectum.

Dr. Ellis said that both he and Dr. Tarbell had found considerable dif-

ficulty in Dr. Minot's case, in introducing the sound two days before the operation, as it seemed to enter a cul-de-sac which was probably the pedicle, though Dr. Minot by slipping the sound around the pedicle passed it quite easily.

Dr. Tarbell said that the pedicle in Dr. Minot's case was not so large as it seemed to be before the operation. The diagnosis in this case was firmly established by passing a catheter into the bladder and the forefinger of the other hand into the rectum, when the uterine mass was found above that of the tumor.

Dr. Minot stated that there had been no hæmorrhage at the time of the operation nor since.

Dr. Baker thought that the removal of uterine polypi was not usually attended with much hæmorrhage, yet in one case which he saw, although the polypus was small, the bleeding was excessive.

Dr. Tarbell asked if the hæmorrhage came from the polypus or the inner surface of the uterus.

Dr. Minot said he thought it might arise from both, as the polypus is covered with minute vessels, and it is well known that a foreign body in the uterus will excite hæmorrhage from the same.

Dr. Cutler suggested the dilatation of the urethra so as to allow the passage of the finger and, with another finger in the rectum, the practice of conjoined manipulation.

Subacute Cystitis. — Dr. Draper reported the following case of subacute cystitis complicating the puerperal state: —

The patient was an American girl, twenty years old, a primipara. She lived in Hartford, and came to Boston to be confined in some lying-in hospital. She was unsuccessful in her search for the lying-in institution, and, fatigued and sick, she went to a boarding-house where her child was born after a labor of eight hours, without medical assistance. The placenta was not delivered until two hours after the labor terminated, and in the mean while the patient flowed profusely. The patient stated that she did not pass her urine for four days after her labor, and that she then sought medical aid and was relieved by the catheter. There was pain in the region of the bladder which was not relieved by the catheterization.

When her baby was nine days old, the patient entered the City Hospital with an axillary temperature of 100° and a pulse at 96, a poor appetite, pain over the pubes, and dysuria. The catheter drew off a quantity of ammoniacal, offensive cloudy urine, with a heavy deposit of ropy mucus. There was no hæmaturia.

The subsequent course of the case was progressive toward recovery, except on the third day when a severe exacerbation of the symptoms occurred in consequence of the patient's imprudence in leaving her bed without permission. At this time the lochial discharge was suspended, a chill occurred, the vesical pain and dysuria were increased, and the temperature reached 103.8°, the pulse 120. During the succeeding twenty days of the patient's stay in the hospital convalescence was satisfactory, the bladder symptoms gradually subsiding, and the urine resuming its normal character.

The treatment was wholly local. The catheter was used twice daily, and the bladder was then thoroughly washed out with warm water, and after the fourteenth day with a solution of carbolic acid in warm water, ʒiss to Oj.

CITY REGISTRATION.[1]

THE city registrar's detailed annual report appeared this year several months later than usual. The opening remarks of the report, after an allusion to "the delay which has been thought to have occurred in its appearance," contain the following statements: "Prior to the existence of the Board of Health, it appeared to be expected of the city registrar that he would offer such suggestions concerning the health of the city as he might deem worthy of consideration, on the ground, doubtless, that there was no other officer in possession of the facts that would enable him to perform that very desirable service. The establishment of the Board of Health, however, to which is properly confided all that relates to the sanitary affairs of the city, and the publication in their reports of the mortality and statistics of the city seemed to render a duplicate report by the city registrar superfluous. Except in stating the number of deaths and designating the localities where they have occurred, it is far from being evident that the ordinary mortality reports are of any practical benefit, so far as the sanitary service of the city is concerned. . . . The most that can be claimed for this and similar mortality documents is, that they contain statistics of importance collected for preservation. To that extent they subserve a useful purpose. But as the facts exhibited in one year are not essentially different from those that are presented in every other year, it is easy to see that the circle of knowledge is not enlarged to any appreciable extent by the frequent repetitions. So far as the statistics contained in mortality reports are capable of being applied to sanitary matters, the report of one year is equally applicable to any other year." The registrar concludes his preliminary remarks by saying that "the state registration report annually contains the condensed returns from every town in the commonwealth, which are always available for every necessary purpose. A consideration of this circumstance, as well as of the others I have named, led me to hesitate in the preparation of this report."

It is somewhat surprising to find that in such a quarter so low an estimate is placed upon the usefulness of the services which may accrue from registration to sanitation. Without entering upon any discussion of the question now raised by the city registrar, it may be said that an examination of his previous reports would show that he has not always considered his contributions to the knowledge of our sanitary needs so entirely devoid of significance as he now confesses them to be. On various occasions, as in 1873 when he called attention to a "remarkable change in the sanitary condition of Boston," which, in his judgment, was not accounted for by the prevalence of epidemics, the city registrar has thought it his duty to sound a cry of alarm. His statements

[1] *Annual Report of the City Registrar of the Births, Marriages, and Deaths, in the City of Boston, for the year* 1875. City Document, No. 84.

of disease, on such occasions, accompanied by speculations upon supposed morbific causes and their prevention by sanitary agencies, have been based upon the statistical evidence contained in his yearly report. Now, however, for reasons which are not apparent in the present report, the city registrar seems to take a very discouraged view of the usefulness of his past participation in the sanitary administration of the city.

It certainly does seem rather superfluous that detailed statements of our vital statistics should emanate every year from three distinct sources, namely, from the city Board of Health, from the secretary of the commonwealth, and from the city registrar. The difficulty of deciding which of the three yearly reports could with least loss be omitted is, however, diminished, in consequence of the entire frankness with which the registrar admits his disbelief of the usefulness of such statistical statements as he has hitherto felt called upon to issue every year. His own lack of faith in the utility of registration, as related to sanitation, goes far to explain the comparative fruitlessness of his own collaboration in the sanitary affairs of the city. Dr. Draper, whose successful exertions in the fields of sanitation and of registration are well known to our readers, and whose opinions on such subjects are eminently entitled to consideration, remarks that "the value of any compilation of vital statistics depends greatly on the zeal and fitness of the registration officer. The data which he collects and preserves are something more than barren numbers. To a zealous and expert official, in love with his duties, they represent an important character. He sees the variety of generalizations which may be based upon them; he appreciates the important lessons they may teach. Hence he realizes the necessity of a constant purpose to make the most of the facts and figures which are returned to him, and of unceasing vigilance to secure the utmost possible accuracy in the details."[1] To show how inadequate is the registrar's conception of the importance of registration in its relations to sanitary science and sanitation, it is necessary only to recall the achievements of Farr, Simon, and Buchanan; of Bertillon, Beaugrand, and Brochard; of d'Espine; of Snow, Russel, Toner, and Jarvis. Under the management of these distinguished physicians, this field of scientific research has been far from sterile.

Not only as regards the utility of vital statistics is the registrar somewhat skeptical; he appears also to have little faith in sanitation. In one passage of his report, after speaking of the average death-rate of Boston for the last twenty years, he goes on to say that, "there does not appear to be any valid reason why a lower one should be expected during the next twenty years, whatever may be the measures adopted and carried out for the promotion of the public health." (Page 41.) In another passage, however, he says that an examination of certain of his tables will prove interesting, "as showing especially where the largest portion of the mortality from preventable causes occurred." (Page 25.) Now if "mortality from preventable causes" does occur, as the registrar admits, then that portion of our mortality can be prevented, and there does appear to be a valid reason why a lower death-rate should be expected during the next twenty years, provided suitable measures of prevention are devised and carried out. Fortunately, in the pursuance of this end,

[1] See Second Annual Report of the City of Boston, 1874, page 88.

the registrar's reports will not be the only available sources of information concerning our sanitary needs.

Turning to the body of the report, the portion most interesting to physicians is naturally that which relates to mortality. By comparing the tables exhibiting the paternity of the born and of the dead in 1875, we find that of all decedents under one ("unknown" deducted) 31.4 per cent., and of all decedents under five only 28.5 per cent., were born of American fathers. On the other hand the figures contained in Table I. shows that as many as 34.9 per cent. of all the children born in 1875 ("unknown" deducted) had American fathers. These facts show that the native element of our population contributes in larger proportion to the births than to the deaths which take place. While upon this subject we would call attention to the fact that Table VII. is wrongly headed. As shown in the text, it does not exhibit the "nativity of decedents under twenty years of age," but their *parentage*. Another criticism must be made concerning the arrangement of the facts tabulated in Tables VII. and VIII. Both of these tables are incomplete, one showing the parentages of decedents under twenty, while the other shows the nativities of decedents over twenty. No figures or tables, however, are given to show the parentage or the nativity of decedents at other ages, so that it is impossible for us to learn the total number of decedents of native or foreign birth or parentage. Information on these points would have been more useful than some of the statements for which room was found in the report, as that "the daily average of the deaths during the year was 25.54;" or that "one experienced groom who had been four times widowed, chose as his fifth bride one who had never before appeared in the matrimonial market."

From the table showing the causes of death, we learn that croup and diphtheria caused six hundred and thirty-four deaths, making seven per cent. of all deaths. The average percentage of deaths by these diseases from 1865 to 1874 was but 2.48. Deaths by scarlatina amounted to five hundred and fifty-five, or 6.20 per cent. of all deaths, the average decennial percentage being 4.33. Wards four, five, eight, fourteen, and sixteen, containing together 17.7 per cent. of the population of the city, furnished only 5.59 per cent. of the victims of this disease.

The statements relating to consumption appear to demand some comment, on account of the methods of elucidation adopted by the city registrar, and on account of the erroneous conclusions thereby reached by him. A table and figures are given which are intended to show the degrees of prevalence of this disease among the various nationalities, native and foreign, which compose our population; other figures relate to the distribution of consumption throughout the city, divided into wards. The facts exhibited in these tables are interesting and valuable. So defective, however, is the method used in their interpretation, as to obscure or even alter instead of explaining their real significance. The error repeatedly committed in the interpretation of these statistical facts consists in attempts to determine the frequency of the disease under consideration by means of ratios involving two variable factors. Thus, with regard to the distribution of consumption by wards, a table is given showing the *ratio of deaths by this disease to total deaths* occurring in each ward. This ratio, how-

ever, does not represent the real degree to which consumption has prevailed, inasmuch as the total mortality by all causes is quite as liable to vary as the mortality by the particular disease whose frequency it is proposed to ascertain. Supposing, for instance, two wards, in one of which the total mortality and the mortality by consumption were twice as great as in the other, the ratio adopted by the city registrar would be the same in both cases. Evidently, however, it would be a mistake to infer that consumption prevailed equally in both of these wards, for the prevalence is really twice as great in one as in the other. The correct way to estimate the prevalence of disease consists in the use of *rates*, expressing the proportion of deaths to population. An example will show what different results the two methods give. The registrar says that "in wards eight, nine, ten, and eleven, embracing territories contiguous to each other, and possessing similar topographical features, and occupied largely by a native population, the ratio was one in 6.519." As the mean ratio throughout the city was one death by consumption in 6.601 deaths by all causes, it might be erroneously inferred that the prevalence of consumption in these four wards was very nearly as great as throughout the city. But if, availing ourselves of the recent census, we calculate the rates of these wards, we find that while the mean consumption rate of Boston in 1875 was 3.96 per one thousand living, the rate in the four wards "occupied largely by a native population" was only 2.85 per one thousand, and that in ward nine the rate stood as low as 2.32. In ward two, on the other hand, which is inhabited largely by a foreign population, the consumption rate was as high as 5.28 per one thousand living; yet, in this ward, the ratio of deaths by consumption to total deaths was one in 6.349, which differs but slightly from the ratio of the four wards alluded to above.

So also with regard to the liability to consumption which characterizes each of the nationalities composing our population, the use of this defective method only leads to erroneous conclusions. The registrar tries to throw doubt upon the correctness of an assertion recently made to the effect that our Irish inhabitants show a marked proclivity to consumption. His elaborate attempts at demonstration fail, however, to establish his position, the vicious ratio of deaths by consumption to total deaths being the only means of elucidation used in support of his views. If, taking the data relating to population as the basis of our calculations, we compare together our Irish inhabitants and the other foreigners, we find that while the Irish, constituting 59.6 per cent. of our foreign-born population, furnish 73.8 per cent. of all the deaths by consumption occurring among foreigners, the remaining portion of our foreign population, amounting to 40.3 per cent., furnish but 26.1 per cent. of all the foreign deaths by the disease under consideration. In the last report of the city Board of Health, we find additional data, not given by the city registrar, which are quite significant. A table giving the parentage of all decedents by consumption shows that of all such decedents as were of foreign parentage as many as 80.7 were of Irish parentage. The ratio used by the registrar should be employed only for want of better methods, and without much reliance being placed upon the results so obtained.

The statistical tables and statements, which constitute the greater part of

this report, are interesting and valuable. They appear more satisfactory than usual, the discoverable errors being few and unimportant. Many of the comments and reflections added by the registrar, on the other hand, appear superfluous and at times even somewhat ill judged. It would perhaps be as well if he were to confine his exertions to collecting and tabulating the statistical facts recorded in his office, leaving to others, suitably qualified by virtue of medical education and experience, the task of interpreting their significance and of deducing appropriate measures of sanitation.

STATE REGISTRATION.

Dr. F. W. Draper's editorial remarks in the Thirty-Fourth Annual Report relating to the Births, Marriages, and Deaths occurring in Massachusetts during the Year 1875 add another to the series of valuable contributions to sanitary literature for which we are already so much indebted to him.

The year, on the whole, has been unfavorable to the public health. With 1635 less registered births and 1901 less registered marriages than in 1874, there have been 3091 more registered deaths; and the excess of births over deaths, 9018, was 4726 less than in 1874. The depression in the labor market thus shows directly in a diminished ability to meet the responsibilities of married life and to provide the necessities of existence, food, clothing, and protection from the weather, which probably do more to prevent fatal disease than absence of filth. The so-called "filth diseases" and the contagious affections claim the largest part of the excessive mortality, and of these scarlet fever, diphtheria, and croup stand at the head.

The experience of the year is exceedingly suggestive, and calls to mind Dr. Graves's famous advice during the "famine fever" in Dublin. Efforts were making to cleanse the city by a direct tax on the people, but he wisely advised that the money should be spent in procuring abundant and nutritious food, and the result proved his sagacity.

There has been so much loose statement of late in regard to the degeneracy of the American stock, and definitions of the position of women in modern society which would have done credit to Catherine of Russia or the first Napoleon have been so numerous, that Dr. Draper's remarks on this point are particularly interesting. He says: "Even if the fact were demonstrated, as probably it would be, that the Anglo-Saxon mother is, in this generation, less fertile than her Celtic neighbor, the problem would be only half solved, so far as a permanent effect upon the growth of population is concerned. For the birth-rate of a people has its counterpart in the death-rate, and the community that shows a low death-rate with a low birth-rate is certainly not worse than a community with a high death-rate and a high birth-rate." He quotes Dr. Edward Jarvis, too, as saying that "there is not only no ground for the theory of the limited growth of the American and of the unlimited growth of the foreign element in the population of the United States, but, on the contrary, the natural increase is at a lower rate in the foreign than in the American families."

The average annual rate of increase in the population of the State during the past five years was 2.538 per cent.; for the previous five years it was 2.838. The average rates of increase by immigration for the above-mentioned quinquennial periods were respectively 1.858 and 2.048 per cent.

THAMES MUD AND BUTTER.

An article that has recently appeared extensively in the papers of this country as well as of England has led the public to believe that the manufacture of butter from the fatty matter contained in Thames mud was carried on and constituted a systematic and profitable industry. By enveloping balls of cork with masses of matted hair and woody fibre and allowing them to float in the water the fat was said to be collected in balls, which floated up and down the river until they were left by the receding tide upon the bank. *The Sanitary Record* has been led to investigate the alleged Thames butter industry, and thus states the results of its investigation:—

"On visiting the place indicated, we found four men, provided with long poles and nets affixed to the ends of them, engaged in collecting portions of the materials floating on the water at the outlet of the North Metropolitan Sewage Works. The men were in boats, moored so as to lie across a series of channels through which the sewage passes into the river, and we were informed that the time of collecting is limited to about an hour and a half during the flow of the tide. The materials as collected were stored in the boats, and they presented a most uninviting appearance, consisting of a great variety of articles, such as matted hair, bits of wood, pieces of matches and straw, tarry matters, and a fair sprinkling of particles of fat. After each skimming operation the boats with their contents are taken to small barges, where there are appliances for extracting and purifying the fat. We obtained samples of the materials from the men, and afterwards operated upon them to extract the fat, with a view to determine how far it was practicable to purify the fat so as to render it fit for use in the manufacture of butter as alleged. We subjected it to various purifying processes, but completely failed in rendering the fat bright and free from offensive and disgusting odor, and we can have no hesitation in assuring the public that there need not be the least apprehension of their breakfast table being supplied with 'best Brittany' manufactured from fat recovered from Thames mud. That the refuse fat from the millions of kitchens in London may in part be recovered and utilized is beyond a question of doubt; but it is equally certain that the fat so recovered can only be purified to such an extent as to fit it for use in the manufacture of the most common kinds of soap and dip candles.

"We obtained a sample of the balls referred to in the article of which we have spoken, and, as stated, they have a cork or bung for their nucleus, and are left on the banks at high-water mark by the receding tide, but they contain such a small proportion of fat that they are but little sought after. These balls, which are found in the neighborhood of the sewage outlets on both sides of the river, are not white in the interior, as represented, but dark throughout, and are chiefly composed of matters other than fat."

MEDICAL NOTES.

— In the meeting of the Gesellschaft für Natur- und Heilkunde in Dresden (*Jahresbericht*, 1875–1876), Förster spoke of the way in which measles and scarlet fever spread. According to him, measles occurs in close, short epidemics, after which it disappears almost entirely. After from two to four years it returns again in the same way. Scarlet fever appears every five or six years epidemically, yet there never exists a period which is wholly free from it. The speaker said that the mortality of scarlet fever had gradually decreased in the last twenty-five years, and that the average death-rate was now fifteen per cent. In the last epidemic of measles Förster saw one hundred and thirty-five cases in sixty-two households; of these cases sixty-nine were school-children, and sixty-six were younger or older children. In forty-six households it was proved that a child attending school was the first to be taken sick. The stage of incubation showed itself here to be thirteen and a half to fourteen days. The infection takes place on the first or second day of the prodromal stage, which is from one to five days in duration; infection in a later stage is more rare, and could only once be authenticated on the fifth day after the eruption. The power of contagion rapidly diminishes after the eruption. The contagium is not very "taking," and the physician does not spread it.

With regard to scarlet fever, schools do not have the same significance which they do for measles. The contagium has a much greater vitality, and can also be readily spread by third persons. The latency lasts from one to eight days.

LETTER FROM PHILADELPHIA.

Messrs. Editors, — We have in Philadelphia medical libraries of great value whose deserved fame is confined too strictly to the medical men of this city and State. Indeed, one of the richest of these collections of medical lore — that in the Pennsylvania Hospital — is next to unknown even here. That is to say, our medical men are aware of its existence, but few of them consult it. The library which is best known, best appreciated, and most used is in the College of Physicians. Its birth and growth make a most interesting story, which I will briefly tell. For some of my historical details I have to thank the readable little brochure of Dr. R. J. Dunglison on the Medical Libraries of Philadelphia; for others I am indebted to Dr. Robert Bridges, librarian of the College of Physicians.

When the college was about fifteen months old, the foundation of a library was suggested at one of its meetings in April, 1788. By-laws were then presented one of which referred to the future establishment of a library. Nothing more was then done. The records of this date contain only this reference to the suggested collection.[1] The college was in its infancy, numbering but few members. The city contained only forty-four thousand inhabitants, and probably possessed not more than fifty physicians. Of these, twenty-two were

[1] Section vii., Library.

among the founders and fellows of the college. Only one of them lived west of Fifth Street, which is now far down town. Their place of meeting was at the university building, then at the corner of Fourth and Arch streets. These founders included Dr. Jonathan Redman, — the first president of the college, — several professors of the University and College of Philadelphia, among them Drs. William Shippen, Jonathan Morgan, Benjamin Rush, Adam Kuhn, James Hutchinson, Samuel Powel Griffiths, Casper Wistar, Dr. Chovet (an able anatomist and an eccentric man), and others. After agitating the subject of the library at several meetings, a donation of books was received. But books were few, and the college had not even a book-case. The services of a librarian were not required until 1792. Even so early as 1782 the college proposed the publication of a volume of their transactions as often as a sufficiency of material warranted. Thomas Dobson offered to publish a volume "at his own risque," and in the fall of 1793 the first publication was issued. It had the valuable effect of establishing a system of exchanges, which soon supplied the college with journals and transactions. This system is still in force. In July, 1789, a committee was empowered to purchase £50 worth of foreign books. The striking difference between the sea facilities of then and now is shown by the lapse of thirteen months before the committee were able to report that the books "had arrived in sheets and were deposited at the secretary's house," where they were bound in plain calf, and whence they were afterward transferred to the college. In 1790, by a legacy of Dr. Jonathan Morgan, whose death occurred at this time, the library was enlarged by the works of Hippocrates, Galen, Morgagni, and Harvey, twelve volumes in folio, one in quarto. The works of Morgagni were doubly valuable from the fact that they had been presented to Dr. Morgan by the author, who was so pleased with Morgan, during a visit of the latter at Padua, that he claimed relationship because of a similarity in their names. Dr. Rush, Morgan's biographer, states that Morgagni inscribed upon these books, "Affini suo medico præclarissimo Johanni Morgan donat auctor." Dr. Dunglison thinks Rush must have quoted from memory, for on the title-page of Volume I. Morgagni wrote: "Viro experientissimo et humanissimo D. D. Johanni Morgan auctor;" in Volume II. "Viro de re anatomica bono medico Do. Dei. Johanni Morgan auctor." Dr. Morgan was progressive, for he was "the first man who ventured to carry a silk umbrella, and also an innovator in first introducing the practice of sending to the apothecary for all medicines wanted for the sick."

In January, 1792, having left the university, the college met in the hall of the American Philosophical Society. Books were taken only at the close of each monthly meeting. Two shillings and sixpence was the fine for keeping books more than one month; for each additional month, one dollar. The poverty of the college, the yellow fever epidemics of 1793, 1797, 1799, and other disturbing influences checked the growth of the library. The entire appropriation from 1787 to 1794 was only £60. The library depended on gifts of one or two volumes at a time. From 1805 to 1815 members evinced but little interest in the library. From 1815 to 1825 they were more active. Five English serials, one Philadelphia, and one New England periodical (*New England Medical and Surgical Journal*) were purchased for use of the members.

Nothing of interest is found in the records up to 1834. In 1835 the library committee reported: "The library is in a bad condition and going to decay." It then numbered two hundred and ninety one volumes and some unbound pamphlets, "being," says the report, "mostly the works of ancient authors; being inconveniently situated they are but little read, are in fact a mere foundation for a library." Years passed by, but few books were added. But by 1846 the library contained six hundred volumes, the principal cause of growth being the library of Dr. Ott, which had been secured by purchase. Dr. Henry Bird then gave sixty-six volumes of medical books, the largest gift the library had thus far received. Dr. George B. Wood then followed with a gift of seventeen volumes, "the first of a series of munificent donations," says Dunglison. The library now slowly but surely grew in size, and in 1857 numbered 2155 volumes. Many hundred volumes were then given by Dr. Thomas Batton, including very rare works. This gift imparted a stimulus which is still felt. During the year 1858 Dr. Robert M. Huston contributed several hundred foreign and domestic journals. In 1859 the widow of Dr. Mutter presented her husband's library. In 1863 the new building of the college, on the corner of Thirteenth and Locust streets, was declared ready for occupation, and the library was moved thither. The years 1864 and 1865 were made remarkable by the addition to the library of 4500 volumes; 2500 had been given at once by Dr. Samuel Lewis. This generous gift was arranged in a place by itself, and christened "Lewis Library."

Dr. Lewis continues to add to it yearly gifts of treasures selected in Europe by himself, and, as will be seen in the general summing up of the contents of the general library, his contributions have indeed been munificent to a rare degree. In 1865 Mr. George Ord, a philologist, offered to the library a collection of scientific and miscellaneous works of such value that the library committee decided in this instance to depart from their custom of receiving only medical works and therefore accepted it. The library in this way became possessed of "the best editions of the most eminently classic writings in French and English, many volumes of voyages and travels, and the best and probably the largest collection of English and French dictionaries in the country." This collection is the result of a half century of careful selection on the part of Mr. Ord.

In 1866 it was said that the college possessed 17,000 titles of books, and it was regarded as a better library of medical books than could be found in any similar institution in America. Dr. George B. Wood, then president of the college, expressed his conviction that more time should be allotted to practitioners for access to the library, and in order to meet expenses thus incurred he offered to give five hundred dollars yearly. The offer was accepted, and the laws so amended as to keep the library open daily between eleven A. M. and three P. M. Dr. Robert Bridges was appointed librarian (1865), and still holds the position. He is editor of the American edition of Towne's Chemistry, and holds the chair of chemistry in the Philadelphia College of Pharmacy. The general library, including the Lewis and Ord donations, now numbers 19,965 volumes, nearly a third of which were contributed by Dr. Lewis. It is very rich in American and foreign journals, a large list of which is constantly supplied in exchange for the Transactions of the College, by Dr. Lewis,

and by a fund voluntarily contributed by members who form the Journal Association and pay three dollars each per annum. The books and journals are free to all regular physicians, but none other than members are allowed to take them from the building. In the library apartments are portraits in oil of distinguished medical men. There are, of course, many rare and valuable books and pamphlets. Among them an "Essay on West India Gripes, by Dr. T. Cadwalader, printed and sold by Benjamin Franklin, 1745"; also in the Lewis library curious old books dating back to the sixteenth century. I may especially note a fine collection of the school of Salernum. Dr. Lewis in buying all the best works of the day has taken care to purchase only original editions. There is not a single reprint in his donation.

In 1862 by the subscription of twenty-three of the Fellows the college received the gift of one hundred and ninety-two volumes of Collection des Thèses soutenues à la Faculté de Médecine de Paris, 1822 to 1846 inclusive. This is the finest collection of these dissertations in the country.

In the library of the Pennsylvania Hospital, Philadelphia possesses another rich collection of medical and scientific works. This library was founded in 1763. It was first suggested by the gift to the hospital by Dr. John Fothergill of a single book in 1762. Even at this time the number of students attracted to the hospital by its reputation as a school for clinical medicine and surgery had become considerable.

The board of managers therefore resolved to demand a fee from these students for the privilege of visiting the wards of the house. The physicians of the hospital were then consulted as to the disposition of the sum thus raised. These gentlemen resolved to lay aside all personal claim to these funds, and proposed that they should be applied to the foundation of a medical library for the benefit of the pupils of the institution.

The library thus begun slowly grew by means of gift and purchase until arrested by the war of the Revolution. From 1774 to 1787 the only books added to the collection were Boerhaave's Academical Lectures, six volumes. Hill's Old Man's Guide (pamphlet), Johnson's Midwifery, Kirkland on Puerperal Fever, and Collins's First Lines. The latter book, purchased in 1780, cost the insignificant sum of £135 5s. This was when our forefathers were obliged to carry two baskets to market. In one they deposited their purchases, the other contained the money to pay for them. The £135 5s. in depreciated currency represented £1 15s. in gold, which was the actual cost of Collins's celebrated book. The library now contains over thirteen thousand volumes, for gifts and purchases have steadily increased and still increase its size. The fees from students who attend the Wednesday and Saturday clinics of the hospital are as heretofore relinquished by the medical teachers in behalf of the library, and must amount to several hundred dollars yearly, for not only do students from the two regular schools attend these clinics, but also students from the homœopathic and eclectic schools.

The fee was originally fixed at six pistoles, or $21.60, for "perpetual attendance." Later, in 1802 and as late as 1830, the annual fee for attendance on lectures and use of library was ten dollars. At present students pay two dollars for the yearly ticket, and, unless I mistake, are not allowed access to the library.

Formerly the hospital was left in charge of "apprentices." They have since been replaced by "resident physicians," who apply for vacancies immediately after graduation. One of the apprentices acted as librarian, and according to the rules of the hospital was obliged "to bleed and cup, leech, dress wounds, and assist the senior apprentice in dressing fractures." This system of medical apprenticeship was attended by the following conditions: "The apprentice shall bring a single feather-bed, which he is to leave in the house. He is to serve five years, and must give two securities to pay the rate of £100 per annum for every day he absents himself without leave from the managers. He shall fill up his time with study. He shall look for no indulgences by leave to attend parties and places of amusement, nor be abroad in the evening. Nor will it be considered for his benefit to receive visits at home, this being foreign to the views of parents or friends in placing him, or managers in receiving him, as apprentice. He is allowed two seasons out of five, selected by the managers, to attend medical lectures, always observing to return home so soon as each shall be over."

With this interesting digression I may further say with reference to the library that it is almost unknown by the profession at large, being principally used by the officers of the house. This is to be much regretted. This library might fairly supplement that of the College of Physicians, for there is a surprising absence of duplicate copies. The two libraries massed would constitute a larger and finer collection of medical works than any other on the continent.

The Philadelphia Hospital also has a valuable library of about three thousand volumes, especially rich in ancient surgery and medicine. It was started in 1808. The apothecary of the hospital acts as librarian. As in the Pennsylvania Hospital so in this, the amount derived from students' fees is devoted to the purchase of books for the library. There has also been for several years an annual appropriation of $250 for the same purpose. "But the library has been plundered, by vandalism to which it has been exposed, of much valuable matter."[1] Reliable paupers superintend the giving out of books. The librarian attends to the purchase of books and general supervision.

In the Mercantile and Philadelphia (circulating) libraries are many medical works, the former possessing one thousand volumes. In the latter are very choice old books of the sixteenth, seventeenth, and eighteenth centuries. But these two collections are not much known and are but little used.

There are, too, nuclei of libraries in various other medical institutions, but as yet do not merit special mention. It will be seen, however, that Philadelphia is very wealthy in medical works. A visit to the best of these libraries would be a source of great pleasure to medical gentlemen who may visit Philadelphia. They will meet with nothing but courtesy at the hands of the librarians. The card of any Philadelphia physician who has a claim upon the libraries would probably facilitate the entrance of a stranger. H. O.

January 23, 1877.

[1] Agnew's Sketch.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING JANUARY 20, 1877.

	Estimated Population, July 1, 1877.	Total Mortality for the Week.	Annual Death-Rate per 1000 for the Week.	Death-Rate for the Year 1876.
New York	1,077,228	416	20.08	27.46
Philadelphia	850,856	305	18.64	22.24
Brooklyn .	527,830	193	19.01	24.31
Chicago . .	420,000	156	19.31	20.41
Boston . .	363,940	137	19.58	23 39
Providence	103,000	44	22 21	18.34
Worcester .	52,977	16	15.71	22.00
Lowell . .	53,678	22	21.31	22.21
Cambridge.	51,572	14	14.12	20.54
Fall River .	50,370	12	12.39	22.04
Lawrence .	37,626	23	31.79	23.32
Lynn . .	33,524	7	10.86	21.37
Springfield .	32,976	4	6.31	19.69
Salem . .	26,739	15	29.17	23.57

Normal Death-Rate, 17 per 1000.

Boston Society for Medical Observation. — The next regular meeting of the society will be held on Monday evening next, at eight o'clock, at its rooms, 36 Temple Place. Dr. Green will read a paper on Thrombus of the Brain Sinuses.

Books and Pamphlets Received. — Emmons's Annual Medical Directory of Regular Physicians in the State of Illinois for the Year 1877. Chicago. Pp. 109.

Micro-Photographs in Histology, Normal and Pathological. No. 7. By Carl Seiler, M. D., in conjunction with J. Gibbons Hunt, M. D., and Joseph G. Richardson, M. D. Philadelphia: J. H. Coates & Co. 1876.

A Sermon on Depression. By Rev. C. Van Norden. Published by St. Albans Village Medical Association. St. Albans. 1877. Pp. 10.

Thirty-Fourth Report to the Legislature of Massachusetts, relating to the Registry and Return of Births, Marriages, and Deaths in the Commonwealth for the Year ending December 31, 1875. Prepared under Direction of the Secretary of the Commonwealth, with Editorial Remarks, by F. W. Draper, M. D. Boston. 1877. Pp. 102.

Fourth Annual Report of the Board of Trustees and Officers of the Minnesota Hospital for Insane. St. Paul. 1877. Pp. 38.

Note on the Administration of Phosphorus. Republished from the Proceedings of the American Pharmaceutical Association for 1876. By E. R. Squibb, M. D. Philadelphia. 1877.

The Function of the Uvula and the Prominence formed by the Azygos-Uvulæ Muscles. By Thomas F. Rumbold, M. D., St. Louis, Mo. (Reprinted from the St. Louis Medical and Surgical Journal, December, 1876.)

Annual Reports on Diseases of the Chest. Under the Direction of Horace Dobell, M. D., etc., assisted by Numerous and Distinguished Coadjutors in Different Parts of the World. Vol. II. Pp. 307. London: Smith, Elder, & Co., Waterloo Place. 1876.

The Medical Men of the Revolution, with a Brief History of the Medical Department of the Continental Army, containing the Names of nearly Twelve Hundred Physicians. An Address before the Alumni Association of Jefferson Medical College, March 11, 1876. By J. M Toner, M. D., of Washington, D. C.